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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/822,825	04/02/2001	Benoit Barriere	ATOCM-207	8093
23599	7590	05/11/2004	EXAMINER	
MILLEN, WHITE, ZELANO & BRANIGAN, P.C.			CREPEAU, JONATHAN	
2200 CLARENDON BLVD.			ART UNIT	
SUITE 1400			PAPER NUMBER	
ARLINGTON, VA 22201			1746	

DATE MAILED: 05/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/822,825

Applicant(s)

BARRIERE ET AL.

Examiner

Jonathan S. Crepeau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 6-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 6-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Response to Amendment***

1. This Office action addresses claims 1 and 6-12. Applicant's arguments regarding the Takahashi reference are persuasive and the rejection has been withdrawn. In particular, the polymer of Takahashi does not appear to be capable of being made by the claimed dehydrofluorination/oxidation process. However, the claims are newly rejected under 35 USC §103 herein. As such, the finality of the previous Office action is withdrawn, and this action is non-final.

### ***Claim Rejections - 35 USC § 103***

2. Claims 1 and 6-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 97/27260 in view of Mizuide et al (U.S. Patent 6,329,471).

Regarding claims 11 and 12, WO '260 discloses a lithium battery comprising a positive electrode and negative electrode (see page 6, lines 1-5). Regarding claims 6 and 7, the positive electrode comprises mixed oxide particles (see page 6, line 32). Regarding claims 6 and 9, the negative electrode comprises carbon particles (see page 6, line 9). Regarding claim 8, the current collector of the positive electrode is aluminum (see page 10, line 34). Regarding claim 10, the current collector of the negative electrode is copper (see page 10, line 26). Regarding claims 6 and 13, each electrode comprises a structure having a collector (L1) and a fluorinated adhesive composition (L2) comprising the active material (see page 7, lines 6-27). However, regarding

claims 1 and 6, the invention of WO '260 is more broadly directed to structures comprising a metal (L1), a fluorinated adhesive composition (L2), and a fluorinated resin (L3), in that order (see page 4, lines 18-20). The adhesive resin composition comprises a PVDF resin, a functionally-modified acrylic or methacrylic polymer, and a vinylidene fluoride copolymer resin (see page 2, lines 4-7).

WO '260 does not expressly teach that the layer L2 comprises a fluoro primer which is derived from a fluoropolymer (e.g., VDF-HFP) chemically modified by a partial dehydrofluorination followed by oxidation, as recited in claim 1.

Mizuide et al. is directed to carboxyl group-containing vinylidene fluoride copolymer (see abstract). The copolymer may contain hexafluoropropylene and is made by a dehydrofluorination/oxidation process (see col. 2, line 27 et seq.).

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would be motivated to use the carboxyl group-containing vinylidene fluoride copolymer of Mizuide et al. in the layer L2 of WO '260. In column 1, line 17, Mizuide et al. teach that functional oligomers having a carboxyl group at both terminals are useful as raw materials in adhesives. Furthermore, WO '260 teaches that, with regard to the modified acrylic component in the layer L2, "as examples of functional groups which exhibit bonding properties or affinity in respect of metal, there can be cited carboxylic acid groups or carboxylic acid anhydride groups [...] and the like." (page 2, line 36). Although this teaching is primarily directed to the acrylic component of the layer L2, this teaching would also motivate the artisan to incorporate carboxyl groups into the other components of the layer L2 in hopes of increasing the adhesive strength of those components.

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As such, it would be obvious to use the carboxyl-group containing PVDF-HFP copolymer of Mizuide et al. as the PVDF copolymer component of the layer L2 of WO '260. The hexafluoropropylene monomer comprises a perfluoroalkyl (CF<sub>3</sub>) group, as recited in claim 4.

Further, although WO '260 does not expressly teach the feature in claim 6 that the layer L3 of fluoropolymer contains the active material, this feature would be obvious to one of ordinary skill in the art. As noted above, the reference specifically teaches layers L1 and L2 in an electrode (L2 containing the active material), but more broadly teaches a structure comprising layers L1, L2, and L3 (L3 being a conventional fluoropolymer). The artisan would be motivated to use an electrode structure comprising three layers instead of two because the unmodified fluoropolymer in layer L3 is more resistant to chemical attack than the modified polymer (see col. 6, line 14 of WO '260). Accordingly, the WO '260 reference fairly suggests the three-layer electrode structure recited in claim 6.

### ***Double Patenting***

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

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Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-15 of copending Application No. 10/088,560 (U.S. Pre-Grant Publication No. 2003/0087100). Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the '560 application anticipate instant claim 1. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Conclusion***

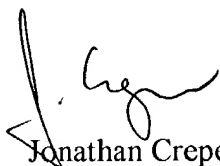
5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (571) 272-1299. The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski, can be reached at (571) 272-1302. The phone number for the organization where this application or proceeding is assigned is (571) 272-1700. Documents may be faxed to the central fax server at (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jonathan Crepeau  
Patent Examiner  
Art Unit 1746  
May 6, 2004